

REPORT  
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### A. History

After gaining possession of Taiwan, the Japanese, during the past 50 years spared no effort to put their agricultural policy for Taiwan into effect. But it was always with an eye to the advantage of Japan, to keeping the economic system under their own control and without the ability to become independent. So up to the present, no large scale independent industrial enterprises have been built up. Thus, although fertilizers have an important relationship to agricultural production, the Japanese did not wish to manufacture much fertilizer in the province, which would have enabled it to supply its own needs.

After 18 September 1931, the Japanese became very aggressive in the execution of their southern expansion policy, and beside emphasizing agriculture, began to pay some attention to aiding the establishment of industry. But the development of the fertilizer industry was not commensurate with the needs. With the outbreak of World War II in the Pacific, normal transportation was affected to the extent that Taiwan was blockaded, and the sources of fertilizer were cut off, striking a heavy blow at agricultural production.

Then the Japanese adopted the plan of large-scale production within the province to achieve self-sufficiency, at the same time cutting off the supply of fertilizer from the South Seas areas. But due to war losses and financial deficiency, they were unable to achieve their goals, and before long, they had to surrender, and their plans could not be realized.

Previous to V-J Day, there were two firms engaged in this business: Taiwan Fertilizer Company, which was established in 1920, and Taiwan Electrochemical Company, which was established in 1935. The former had plants at Keelung, and Takoo (Kao-hsiung), that manufactured calcium superphosphate. The latter's plant in Keelung produced calcium carbide and calcium cyanamide. A branch plant at Lo-tung manufactured calcium carbide only; their quarry which supplied the raw material was at Soo (Su-ao). The combined number of employees of both companies was 1,384. Their combined production for several years previous to the war was as follows:

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Fertilizer Production in Metric Tons

	Phosphate	Cyanamide
1935	17,401	None
1936	22,522	11
1937	24,771	8,346
1938	20,014	4,857
1939	22,320	8,998
1940	21,765	11,290
1941	17,480	11,965
1942	18,377	10,428
1943	25,449	11,745
1944	8,389	3,111
1945	400	227

After the Chinese took back Taiwan, in October 1945, the Office of the Taiwan Special Deputy of the Ministry of Economics established a Fertilizer Commission to manage these two companies. But in view of the serious damage that these plants had suffered, the formidable task of reconditioning, and the difficulty of finding qualified Chinese for the purpose, the Japanese technicians were temporarily retained to repair and operate the factories until April 1946. In May 1946, the (Chinese) Taiwan Fertilizer Company was established, took over responsibility, and effected a reorganization. Beside controlling the original four plants, it also assumed control of the unfinished Japanese-initiated Hsin-chu Synthetic Products Company, with the purpose of increasing the production of nitrogenous fertilizers.

The former and present (changed) designations of the aforementioned plants are:

Location	Original Name	Present Name
Keelung	Taiwan Electrochemical Co, Keelung Main Plant	Taiwan Fertilizer Co, Plant No 1
Keelung	Taiwan Fertilizer Co. Keelung Works	Taiwan Fertilizer Co, Plant No 2
Takao	Taiwan Fertilizer Co, Takao Works	Taiwan Fertilizer Co, Plant No 3
Shinchiku (Hsin-chu)	Taiwan Synthetic Products Co Works	Taiwan Fertilizer Co, Plant No 5
Rato (Lo-tung)	Taiwan Electrochemical Co Works, Lo-tung branch plant	Taiwan Fertilizer Co, Lo-tung branch of Plant No 1

#### B. Present Conditions

The Taiwan Fertilizer Company is an enterprise conducted jointly by the National Resources Commission and the Taiwan Provincial Government. The executive body having highest authority is the Board of Directors composed of seven men, four of whom are appointed by the Commission and three by the provincial

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government. Each appoints one inspector. There is one general manager, who executes the policies determined by the Board of Directors and manages all the business of the company, and three assistant managers. Under them are four main plants and one branch works, which manufacture, respectively, calcium cyanamide, calcium superphosphate, and various other semiprocessed fertilizers and by-products. There are 250 office employees and about 1,500 laborers.

From the beginning of 1946 through October 1947, the main products of the various plants have been as stated below:

	Product	Quantity in Metric Tons Produced	Sold
Plant No 1	Calcium Cyanamide	10,049	9,641
	Calcium Carbide	5,760	5,005
Plant No 2	Calcium Superphosphate	2,898	2,738
	Concentrated Sulfuric Acid	330	261
Plant No 3	Calcium Superphosphate	4,287	3,919
	Concentrated Sulfuric Acid	685	542
Plant No 5	Calcium Carbide	241	236
	Electrode Carbon	526	448
Lo-tung Branch, Plant No 1	Calcium Carbide	2,160	1,983
	Electrode Carbon	13	10*

\*NOTE: The electrode carbon was intended for the use of the No 1 plant. It was planned to increase the production, beginning June 1947, to 20 tons per month; due to lack of availability of raw materials, this goal was not reached.

All the fertilizer produced in these plants is consumed within the province. Other products and by-products, such as are not consumed within the province are exported to supply the needs of the mainland. The products are sold on order of consumers, and also in wholesale lots to dealers. The Taiwan Sugar Company and the Commodities Adjustment Committee handle all the calcium cyanamide that Plant No 1 produces. The Taiwan Sugar Company also handles for distribution to the sugar-cane planters all the calcium superphosphate produced by Plants No 2 and 3.

The calcium carbide manufactured by Plants No 1 and 5, and the Lo-tung Branch of Plant No 1 is taken by the Commodities Adjustment Committee, local dealers and interested local industries.

The sulfuric acid manufactured in Plants No 2 and 3, apart from that used by themselves in the manufacture of fertilizers, is taken by the Eco-hsiung Refinery of the China Petroleum Company, the Taiwan Coal Company, the Lime Adjustment Committee, or the Commodities Adjustment Committee.

The silicon iron made in the No 1 plant is handled partly by the Taiwan Commodities Adjustment Committee, and partly by the Materials Supply Department of the National Resources Commission.

The cyanogen gas made by Plant No 1, excepting that for its own uses, is sold in Taiwan to the shipbuilding yards and other productive industries.

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To be able to supply Taiwan's demand for fertilizer, this company plans to expand the output of its plants. For nitrogenous fertilizers, the annual output of Plant No 1 is to be raised to 30,000 tons. The added equipment this plant will need has been ordered in the USA, and should be installed ready for use by the end of 1948. The goal of Plant No 5 for production of nitrogenous fertilizers is more than 30,000 tons a year, but due to lack of foreign exchange, this expansion cannot be undertaken for the time being. Plans for the expansion of the phosphate fertilizer output contemplate maintaining during 1949 the present combined production of 42,000 tons of Plants No 2 and 3, and if finances permit, increasing their individual output during 1949 to 30,000 and 40,000 tons, respectively.

Beside this, the company intends during 1948 to re-equip the Lo-tung branch works of Plant No 1 so as to produce soluble calcium phosphate /calcium super-phosphate/. Furthermore, in the past, most of the imported chemical fertilizer has been ammonium sulfate. With a view to meeting the demand of farmers for the kind of fertilizer to which they have been accustomed, the company intends to raise funds for the erection of a new ammonium-sulfate plant with an annual capacity of 150,000 tons. It is estimated that the average unit cost of such a plant is US \$150 per ton of product. The present price of imported American ammonium phosphate is about US \$100 per ton.

Therefore, after the completion of the factory, the value of the product of 1 1/2 years' operation would offset the amount of foreign exchange required to erect the factory. Thereafter, year after year, the waste of US 15 million dollars could be saved, an amount of great advantage to the economic reconstruction of the country. Our company should strive with all its strength to realize this objective.

According to statistics for 1938, the consumption of fertilizers in Taiwan was some 630,000 tons. Of this amount 230,000 metric tons were pure chemical fertilizer, which is far from what this company can supply in the immediate future. Were the contemplated plans for expansion of our present factories carried out, their combined productive capacity of nitrogenous and phosphate chemical fertilizers would be at most not over one half of the above-mentioned figure.

Then the progressive advance of agriculture on the mainland will gradually increase the need for chemical fertilizers. If our fertilizers were sold to the interior provinces, even if our plans for large-scale expansion were carried out, the supply would still not meet the demand, and there would be no danger of overproduction.

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